ABSTRACT

The present invention relates to the architecture and use of a computer system optimized for the efficient modeling of graphics. The computer system has a primary processor and a graphics processor. The primary processor has two vector processor units within it, one which is closely connected to central processor unit. Simultaneously performing complex modeling calculations on the first vector processor and CPU, and geometry transformation calculations on the second vector processor, allows for efficient modeling of graphics. Furthermore, the graphics processor is optimized to rapidly switch between data flows from the two vector processors. In addition, the graphics processor is able to render many pixels simultaneously, and has a local memory on the graphics processor chip that acts as a frame buffer, texture buffer, and z buffer. This allows a high fill rate to the frame buffer.